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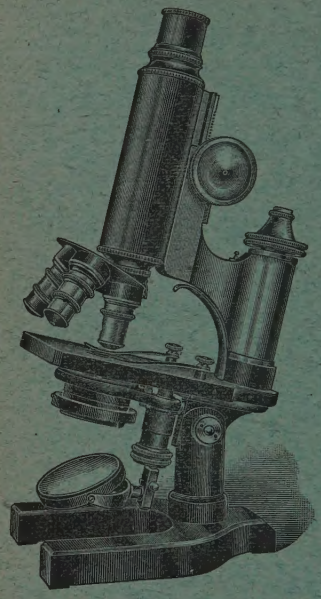

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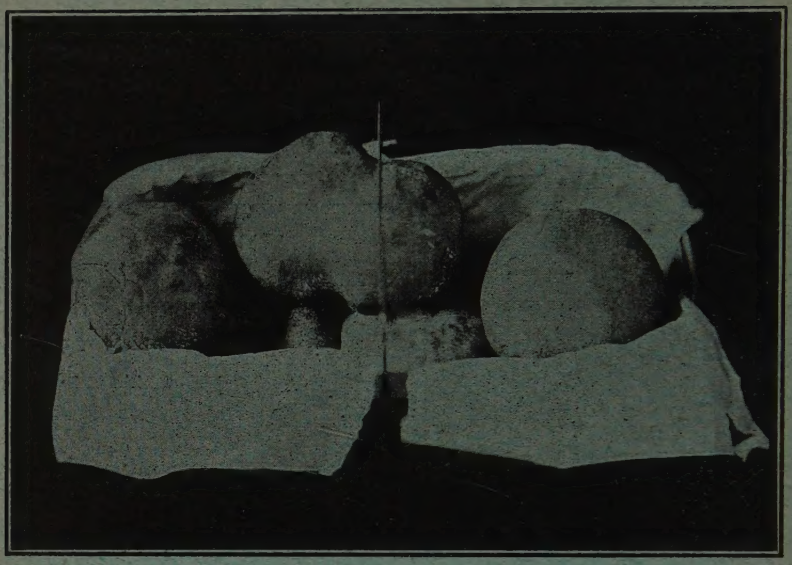

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Mycological Bulletin

No. 74

W. A. Kellerman, Ph. D., Ohio State University
Columbus, February, 1907.

A TYLOSTOMA NUMBER.

The interesting Puffballs belonging to the genus Ty-los'-to-ma have been thoroughly treated by eminent authority, namely, C. G. Lloyd in Mycological Notes, and we give our readers the benefit of his study, which has extended over several years. He has kindly furnished the cuts as well, and we devote this entire No. to the subject.

QUOTATIONS AND ILLUSTRATIONS FROM MYCOLOGICAL NOTES, RELATING TO THE SPECIES OF TYLOSTOMA.

By C. G. Lloyd.

TYLOSTOMEAE.

The Tylostomeæ embrace all Gastromycetes with dry spores, having peridia borne on distinct stalks that are not prolonged as axes.

THE GENUS TYLOSTOMA.

This is the largest genus and the smallest individuals that belong to the tribe Tylostomeæ. It is spread over the earth's surface and every locality has probably one or more species. The genus is more common in sandy countries. All species with the exception of two or three grow in the ground. Tylostoma exasperatum (and perhaps a couple of others that are little known) always grows on branches or logs.

The genus can be thus described. Exoperidium of the nature of a cortex, separating more or less from the upper part of the mature plant, but usually remaining more or less persistent at the base of the peridium. Endoperidium opening by a definite mouth (in a few species by several mouths). There is a depression or "socket" at the base of the peridium into which the stipe is inserted. Gleba of branched, septate, capillitium mixed with the spores. Stipe distinct from the peridium and inserted into a "socket" at its base.

THE SPECIES OF TYLOSTOMA.

For convenience in classification we have divided the Tylostomas into groups according to the most prominent characters as follows:

Mouth definite, tubular, round, naked, more or less protruding.
Spores smooth .....Group 1.
Spores not smooth.
Cortex granular or tubercular or scaly.....Group 2.
Cortex not granular or tubercular or scaly.
Stipe with strong scales, [No American Species]..Group 3.
Stipe without strong scales.
Peridium uncolored .....Group 4.
Peridium colored ..... Group 5.
Mouth definite, naked, elongated, sometimes several on same peridium ..... Group 6.
Mouth with an indefinite, torn aperture, not surrounded with a fibrillose layer, [No American Species].....Group 7.
Mouth surrounded with a fibrillose layer.
Spores smooth .....Group 8.
Spores granular ....Group 9
Mouth "fimbriate" [No American Species].... .....Group 10

GROUP 1.

TYLOSTOMA OCCIDENTALE.—Peridium *white,* with a small, tubular, circular, protruding mouth. Cortex adhering, separating imperfectly, largely adhering in patches to the peridium, not strongly thickened at the base. Stem pale, not scaly, strongly longitudinally striate, white internally, hollow with a central fibril. Capillitium slightly colored, with plane or oblique unthickened septa. Spores 4-5 mic. almost smooth.

This species is very close to Tylostoma albicans, but on comparison is quite different. The peridium is much whiter, the stem strongly striate, the spores smoother. Specimen from the state of Washington.

Fig. 221.—TY-LOS'-TO-MA OC-CI-DEN-TA'-LE. (C. G. Lloyd).

GROUP 2.

TYLOSTOMA VERRUCOSUM.—Peridium globose deeply colored, reddish brown, with a protruding, tubular mouth. Cortex thin, adnate, verrucose, persistent. Stem deeply colored, covered when growing with long, spreading scales which mostly fall away from dried specimens leav-

Fig. 222.—Ty-los'to-ma ver-ru-co'-sum. (C. G. Lloyd.)

ing the stems with short scales. Capillitium faintly colored, freely septate, not swollen at the septa. Spores 5-6 mic. *aculeate.*

This is evidently a very rare and local plant. I collected it once in company with Prof. Morgan who told me it was the first time he had seen it since the original collection some ten or fifteen years before. I have received it from no correspondent save Mr. Long, Texas, who sent two small specimens but evidently the same species. Tylostoma verrucosum is very close to Tylostoma squamosum of Europe, having the same mouth, color, spores and stem scales, and is in my opinion the American expression of the European plant. It differs in its verrucose cortex and more robust habits.

GROUP 4.

TYLOSTOMA ALBICANS.—Peridium uncolored, dirty white, with a small, tubular, circular protruding mouth. Cortex adherent, separating imperfectly, particles adhering to the peridium, at the base of the peridium thickened and subpersistent. Stem pale or slightly colored, rough, striate but not scaly. Internally white, with central fibrils. Capillitium hyaline, slightly swollen at the joints, with a plane septum. Spores 5-6 mic., slightly asperate.

The prominent features are the uncolored peridium, the tubular mouth,

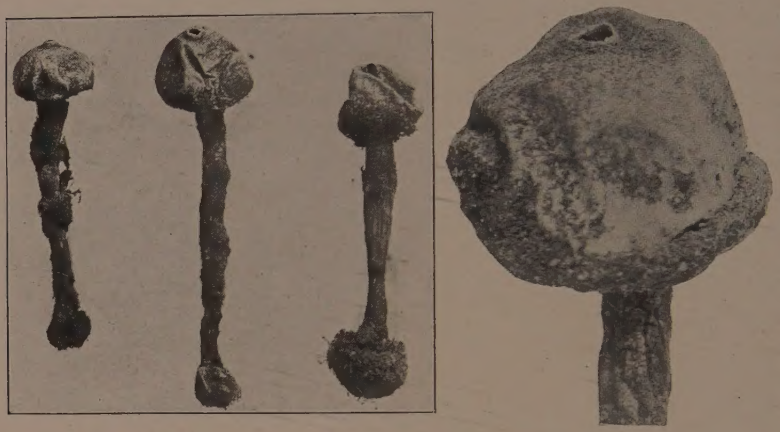

Fig. 223.—Ty-los'-to-ma al'-bi-cans. (C. G. Lloyd).

the partly adherent cortex. The plant is never "smooth" and does not seem to us to be well described or figured by Miss White. However, we are assured from our study of the type specimens and the photographs we have made of them that it is the same plant that reaches us from Texas and hence use the name. We have received Australian specimens from J. G. O. Tepper that we can not separate from the Texan species.

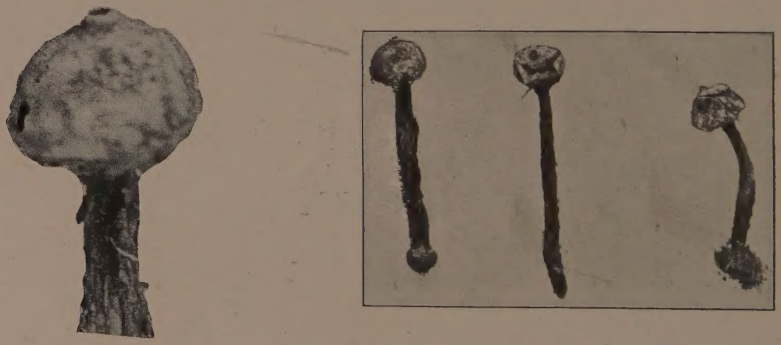

Fig. 224.—Ty-los'-to-ma pyc-mae'-um. (C. G. Lloyd).

TYLOSTOMA PYGMAEUM.—Peridium uncolored, dirty white with a small, tubular, circular, protruding mouth. Cortex adhering, separating imperfectly, particles adhering to the peridium, thickened and persistent at the base. Stem slender, pale, rough, longitudinally striate but not scaly. Capillitium hyaline, swollen at the joints. Spores 5 mic., strongly asperate.

This little species is of a southern range in the United States, and in general appearance could be described as a pygmy Tylostoma albicans. It differs from that species in its small size and rougher spores.

GROUP 5.

TYLOSTOMA SIMULANS.—Peridium pale, castaneous color, with mouth unicolorus. Cortex thin, separating imperfectly. Stem slender, pale, slightly striate and sometimes slightly scaly. Capillitium rarely septate with thickened nodes. Spores 5 mic., asperate.

This is the nearest approach we have in America to Tylostoma mammosum of Europe, and it is a rare plant. On comparison it differs in its unicolorous and more deeply colored peridium, more adnate cortex and paler stipe.

Fig. 225.—Ty-los'-to-ma sim'-u-lans. (C. G. Lloyd).

TYLOSTOMA RUFUM.—Peridium deeply colored, reddish brown, with a circular, tubular, strongly protruding mouth. Cortex thin, adhering, but separating perfectly from old specimens, leaving the peridium perfectly smooth. Stem deeply colored, covered with short scales, internally

Fig. 226.—Ty-los'-to-ma ru'-fum. (C. G. Lloyd).

white with central fibrils. Capillitium faintly colored, not swollen at the septa. Spores 5 mic., granulose.

This species has been, I am sure, usually determined as Tylostoma mammosum in the United States. It differs from Tylostoma mammosum of Europe in its more deeply and uniformly colored and larger peridium, its short, thick, scaly stem and in its capillitium nodes.

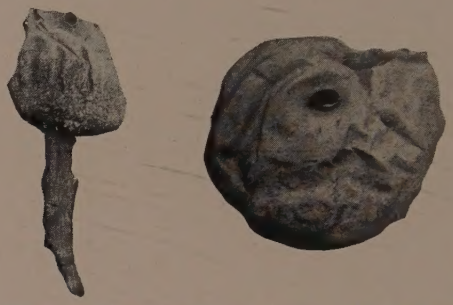

Fig. 227.—Ty-los' to-ma pur-pu'-si-i. (C. G. Lloyd).

TYLOSTOMA PURPUSII.—Peridium pale, castaneous color, darker at the mouth, with a circular, tubular, protruding mouth. Cortex partly adherent at the base but mostly freely separating, leaving the peridium smooth. Stem colored, rough but not scaly. Capillitium subhyaline, the septa rare, those of the smaller branches swollen but of the large branches very slightly. Spores 5 mic., asperate.

This species can easily be taken as a giant form of Tylostoma mammosum. It is a rare plant and I have seen from America only the type specimens at Berlin, which were collected in Colorado by a Mr. Purpus.

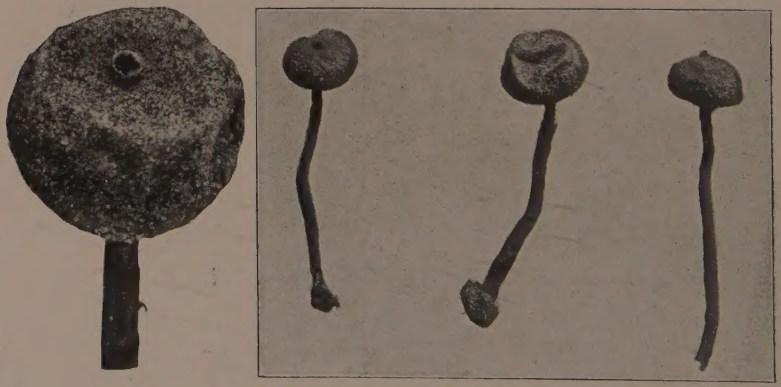

Fig. 228.—Ty-los'-to-ma flor-i-da'-num. (C. G. Lloyd).

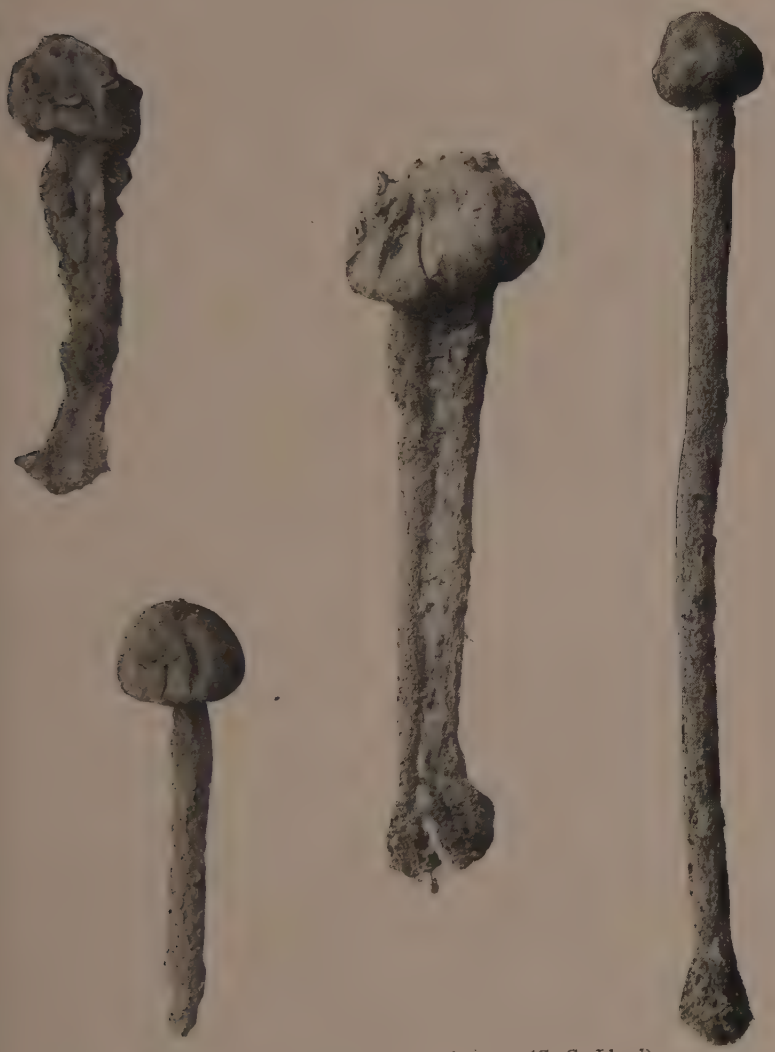

Fig. 229.—Ty-los'-to-ma a-mer-i-ca'-num. (C. G. Lloyd).

TYLOSTOMA FLORIDANUM.—Peridium *dark castaneous* color, with a small, tubular, circular, protruding mouth. Cortex separating imperfectly, particles adhering to the peridium, thickened and subpersistent below. Stem slender, *dark reddish brown*, sub-smooth, substriate with no trace of scales, white within, hollow with central fibrils. Capillitium subhyaline, sometimes waxy with septa both swollen and even. Spores 5 mic., strongly asperate.

This little species seems to be of a southern range, reaching me only

from Florida. The slender, very dark colored stem and the colored peridium distinguish it from all related species.

GROUP 6.

TYLOSTOMA AMERICANUM.—Peridium uncolored, pale, often with several irregular, naked, protruding mouths. Stem obese, pale or light colored, hollow, often striate, varying much in thickness and length, from two to six inches long. Capillitium hyaline. Spores 5-6 mic., smooth.

This plant was collected in great abundance in the vicinity of Denver, Colo., by E. B. Sterling. In my opinion it is only an American form (hence the name) of Tylostoma caespitosum of North Africa, although the spores are not the same and it is a much more robust plant.

SYNONYMS.—In my opinion Tylostoma Kansense is the same plant although I do not use the name, as Prof. Peck (to whom I sent specimens of the Denver plant) strongly disagrees with me and Patouillard and Bresadola have coincided with Prof. Peck. They form their opinions from the darker color of the capillitium, which I readily agree is slightly darker in Kansas specimens. The specimens Mr. Bartholomew sent me are old, wintered specimens(and I think that explains not only the darker capillitium but also the *different mouth* of T. Kansense as described.

[CONTINUED IN NEXT NUMBER]

Fig. 230.—TY-LOS'-TO-MA POC-U-LA'-TUM. (C. G. Lloyd).

(SEE NEXT NUMBER)

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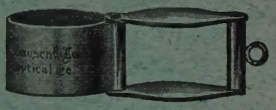

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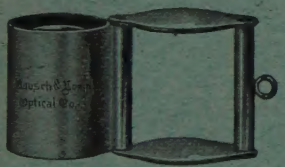

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